PHYSICAL ACTIVITY RESEARCH: PORTFOLIO ANALYSIS

Physical Activity Workshop: How do we get more people moving more?

December 14, 2012

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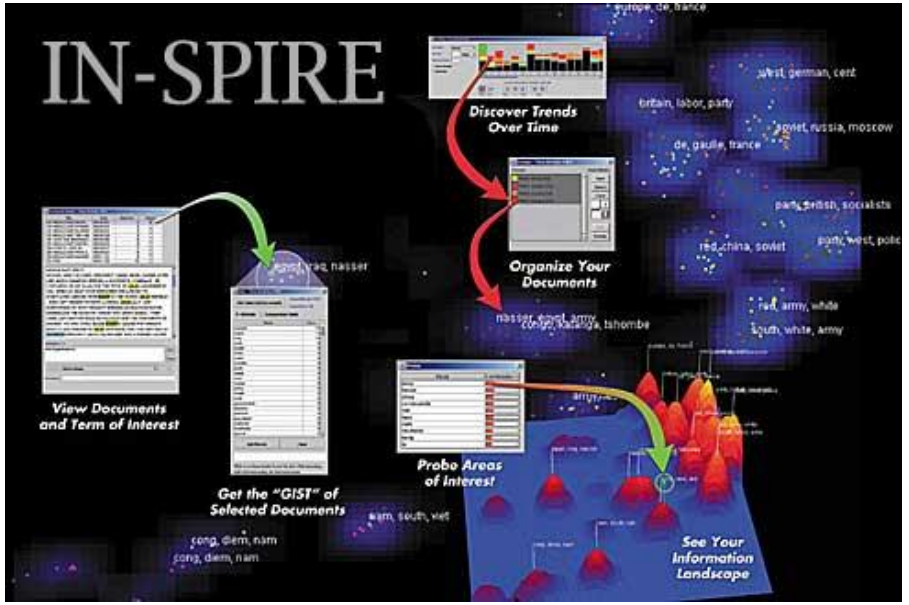
Office of Disease Prevention

National Institutes of Health

What is Portfolio Analysis?

- Purpose: To describe the distribution of projects and research that NIH funds
- Identify trends in funding
- Aids strategic planning initiatives, budget analysis

QVR



Purpose for PA Portfolio Analysis

- To provide a preliminary, high-level overview of NIH's physical activity funding portfolio

- To identify distribution of funding portfolio
  - Over time
  - Across ICs
  - Across different categories

PA Portfolio Analysis: Overview

- 1. Search with QVR (Query/View/Report)
- 2. Develop validation rubric
- 3. Manually sort and validate grants
- 4. Identify challenges and limitations to understand boundaries of the analysis
- 5. Analyze data

PA Portfolio Analysis: Step 1

- Search with QVR (Query, View, and Report)
  - Limited search to RCDC category “Prevention”
  - Searched FY2008-FY2011
  - Funded and Awarded NIH grants
  - Broad keyword search terms in title and abstracts of grant applications: “Exercise” or “Physical Activity”

Portfolio Analysis Process: Step 2

- Validation Rubric: Used titles and abstracts
  - Did not include: Animal studies, tertiary prevention, meditation
  - Did include:
    - If "physical activity" or "exercise" was mentioned in the title or abstract
    - if PA was measured or included in questionnaire
    - physical inactivity/sedentary behavior
    - Large trials or studies that incorporated PA (Look AHEAD, Mr. OS)
  - Did not group grants into further categories

Portfolio Analysis Process: Results

- After manual validation…

Fiscal Year	Number of entries	Valid entries	% Valid entries
2011	1285	787	61%
2010	1537	876	57%
2009	1617	932	58%
2008	1314	817	62%
2008-2011	5753	3412	59%

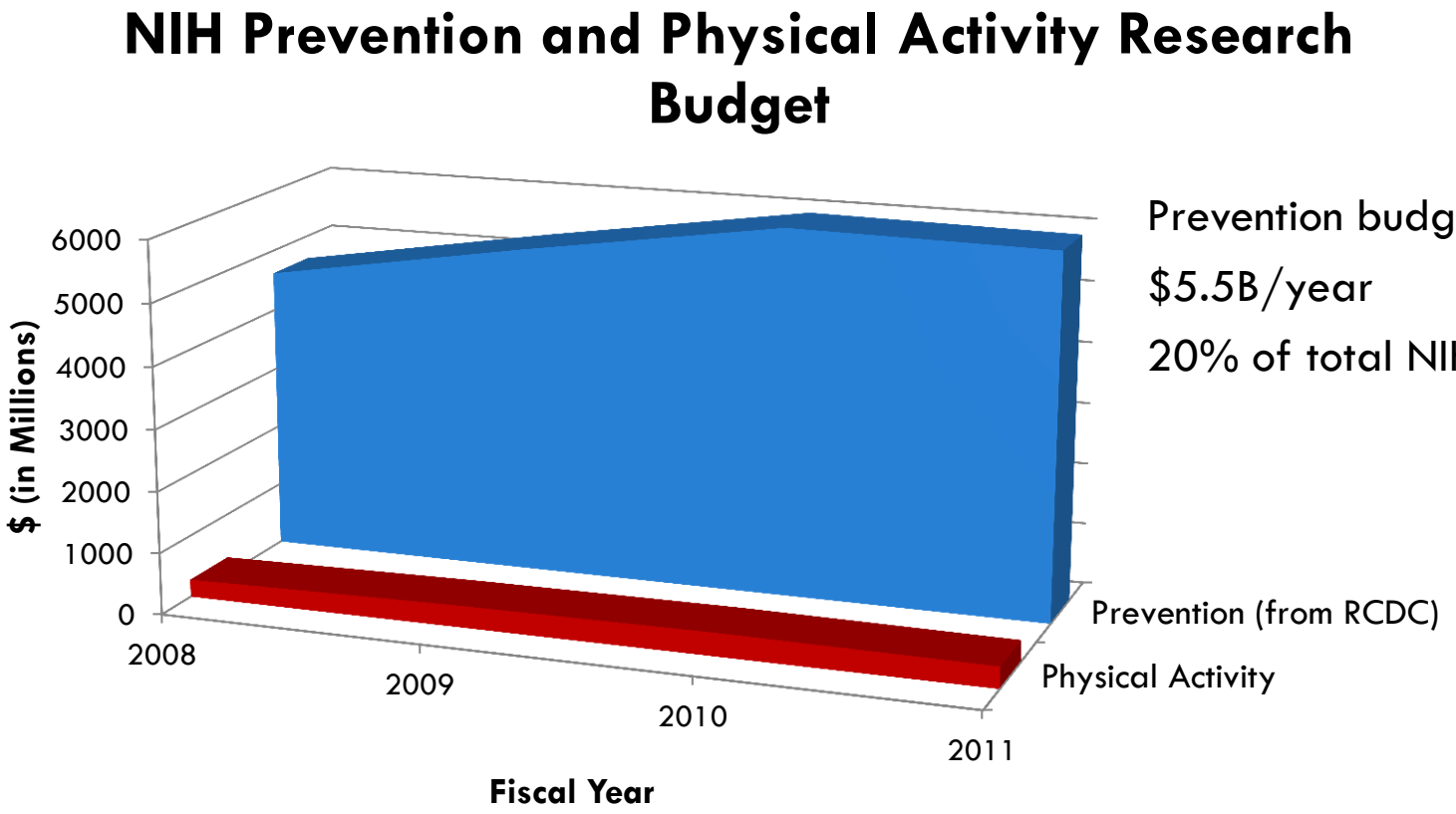
Challenges and Limitations

- RCDC coding: Computerized reporting process
- Tracking multi-year projects
- Does not accurately reflect budget
- Does not capture detailed information

Challenges and Limitations, pt. 2

- Implications for data analysis results:
  - Very rough overview of physical activity portfolio
  - Unknown sensitivity, high specificity
  - Qualitative rather than quantitative

Budget



Prevention budget (RCDC):

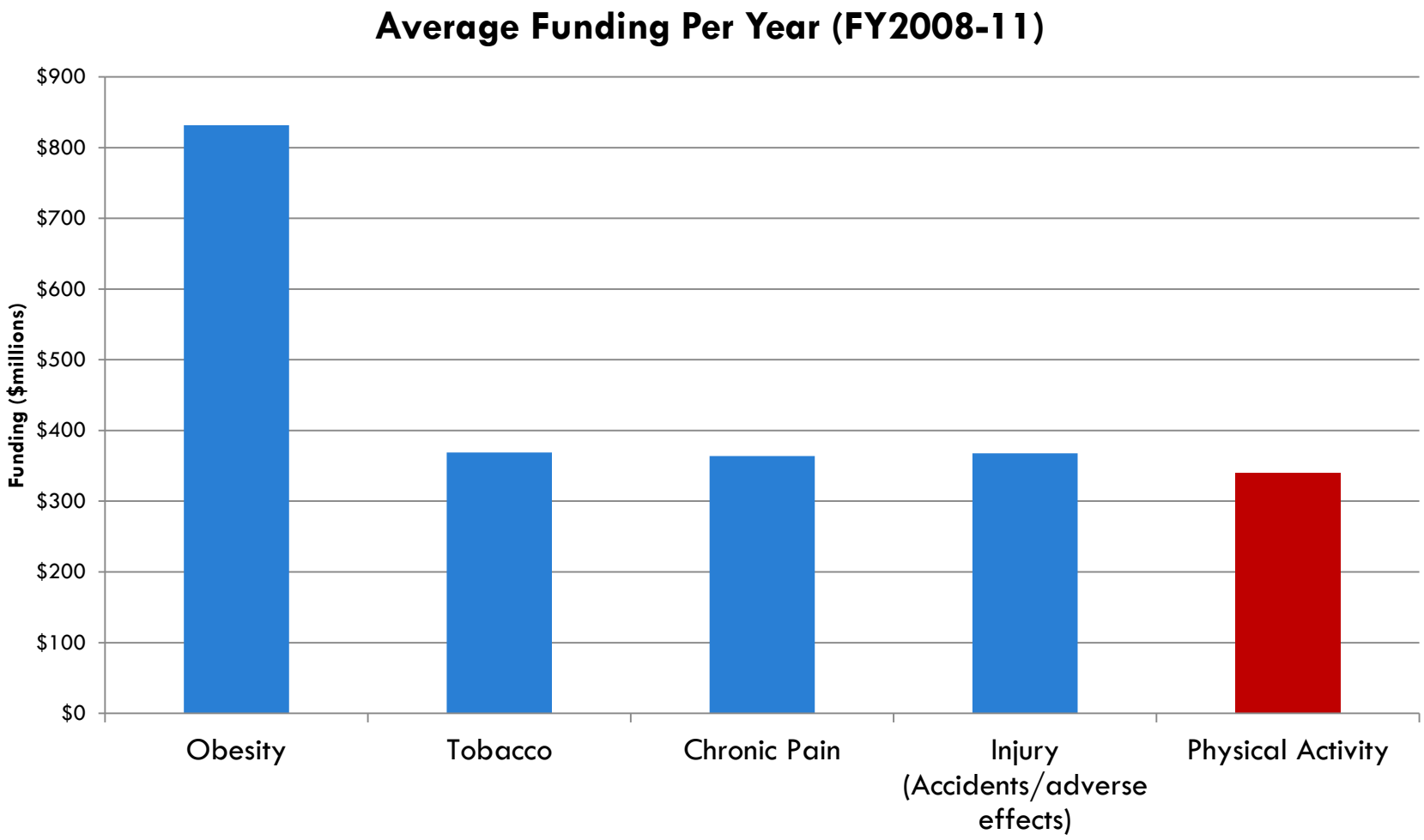
$5.5B/year

20% of total NIH budget

PA budget (on average): $340M/year

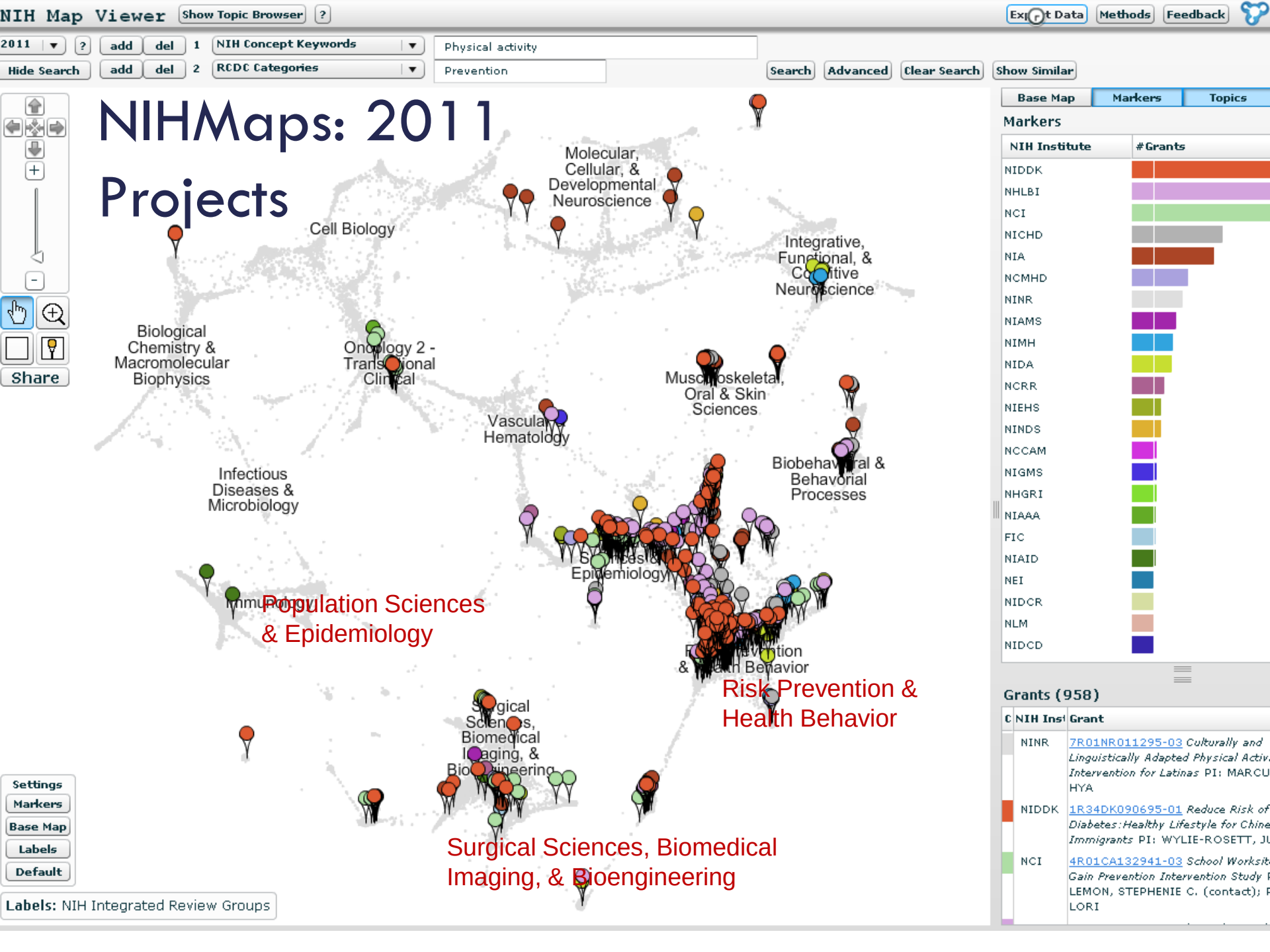
6% of Prevention budget

PA Budget vs. RCDC Categories



Data Visualization Programs

- NIH Topic Maps: Cluster-based visualization using CSR Integrated Review Groups
- IN-SPIRE: Text-mining and data visualization tool
- NIH Portfolio Visualization Tool (Pviz)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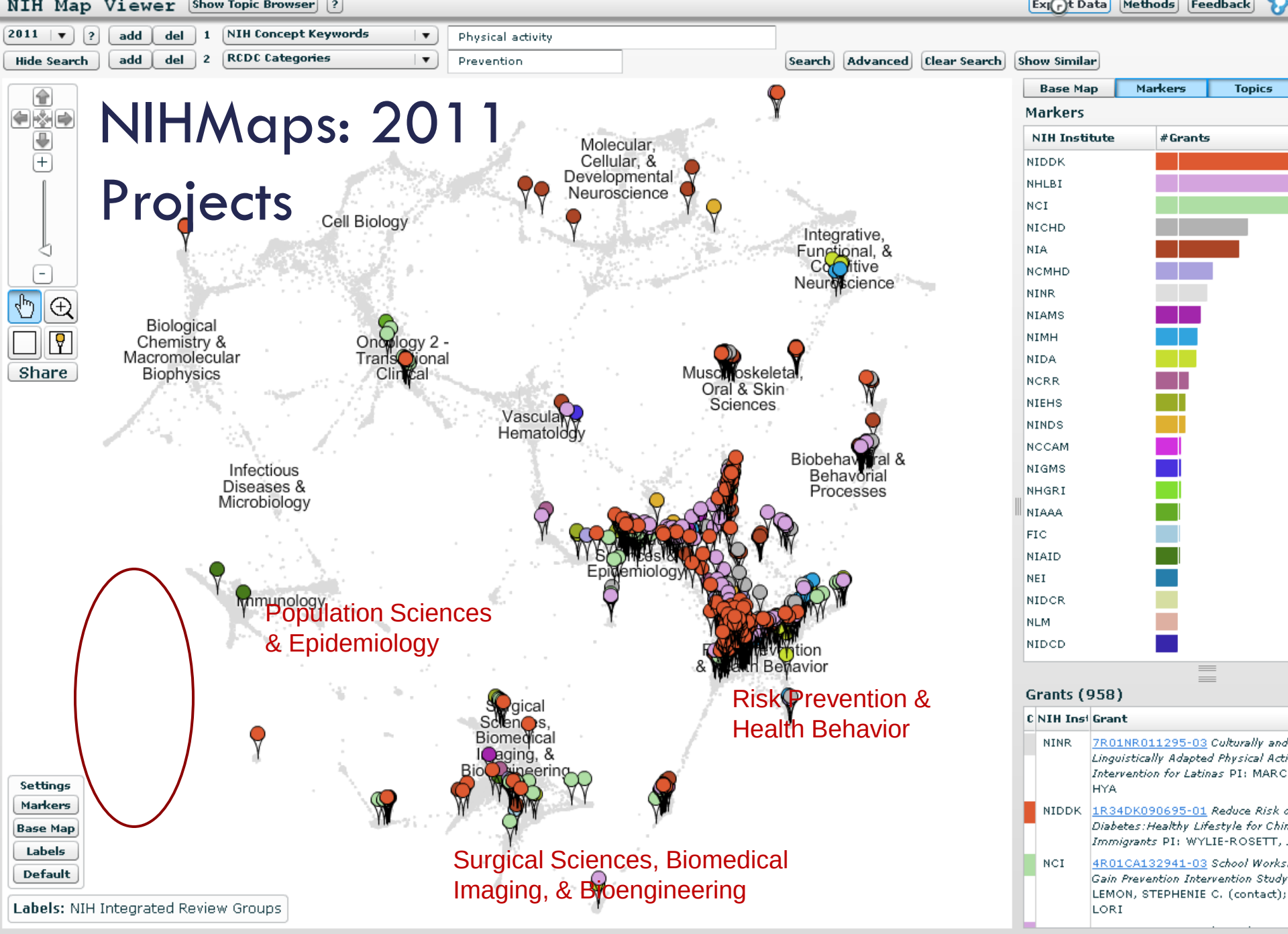
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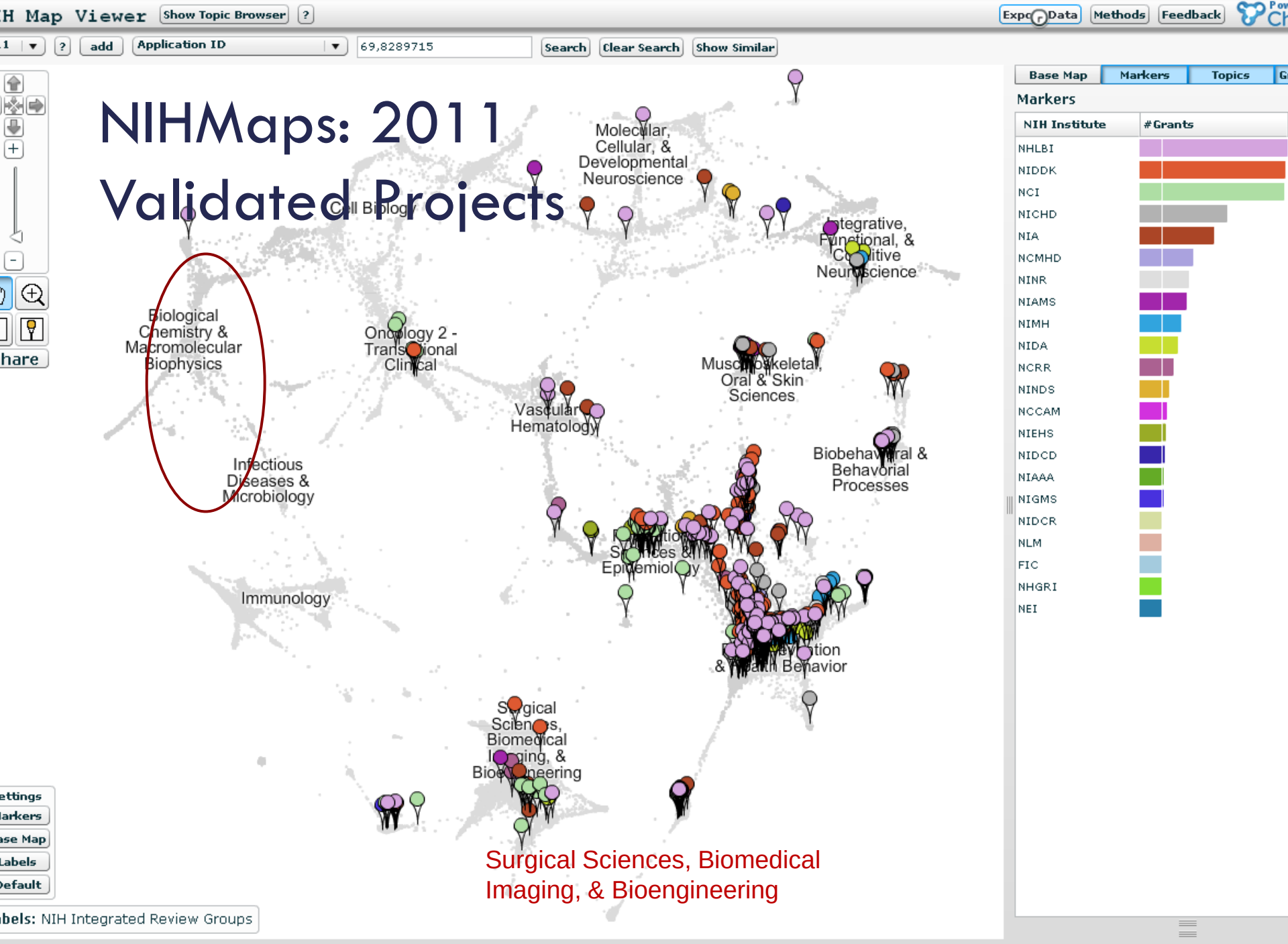
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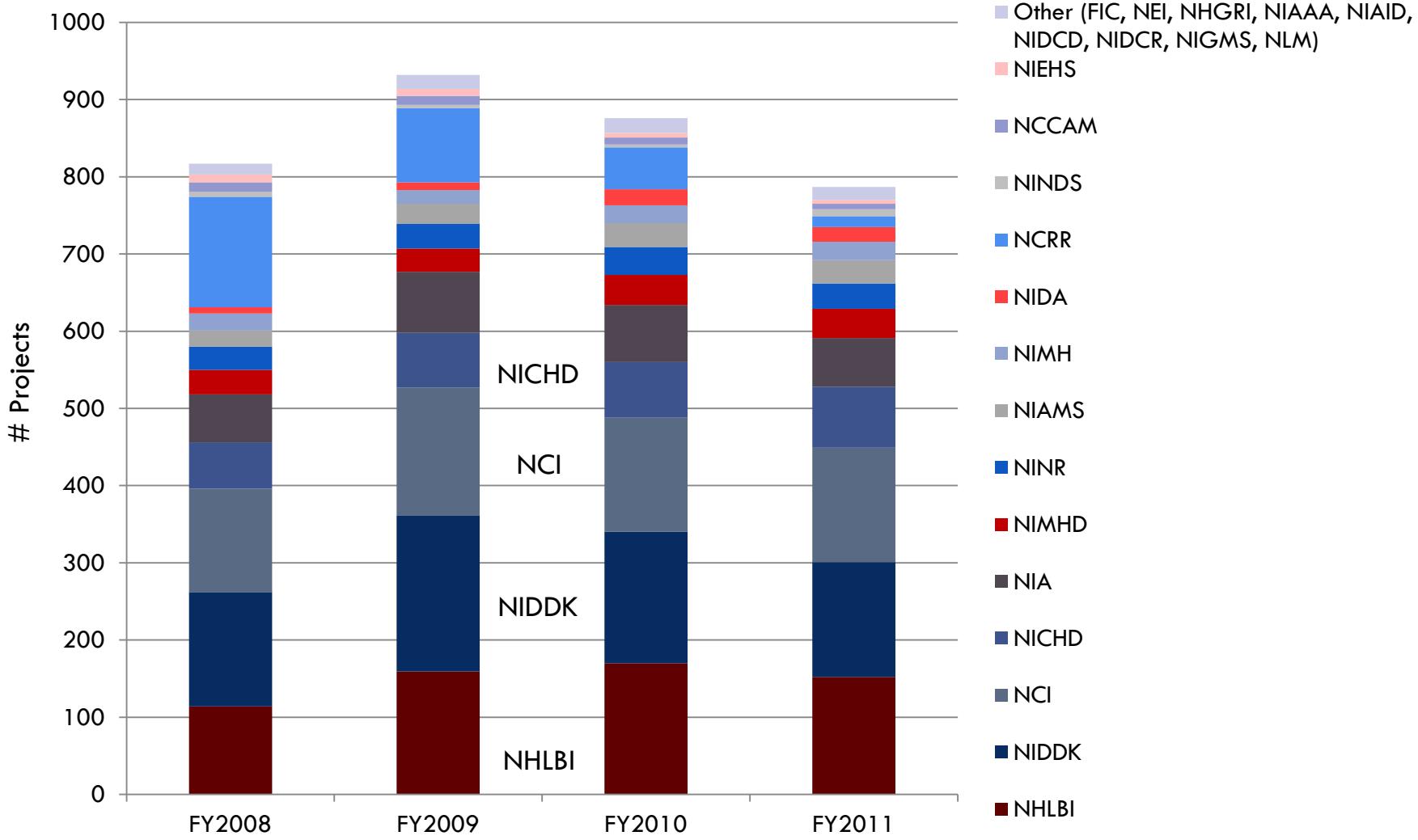
Surgical Sciences, Biomedical Imaging, & Bioengineering
Labels: NIH Integrated Review Groups

Projects by Year



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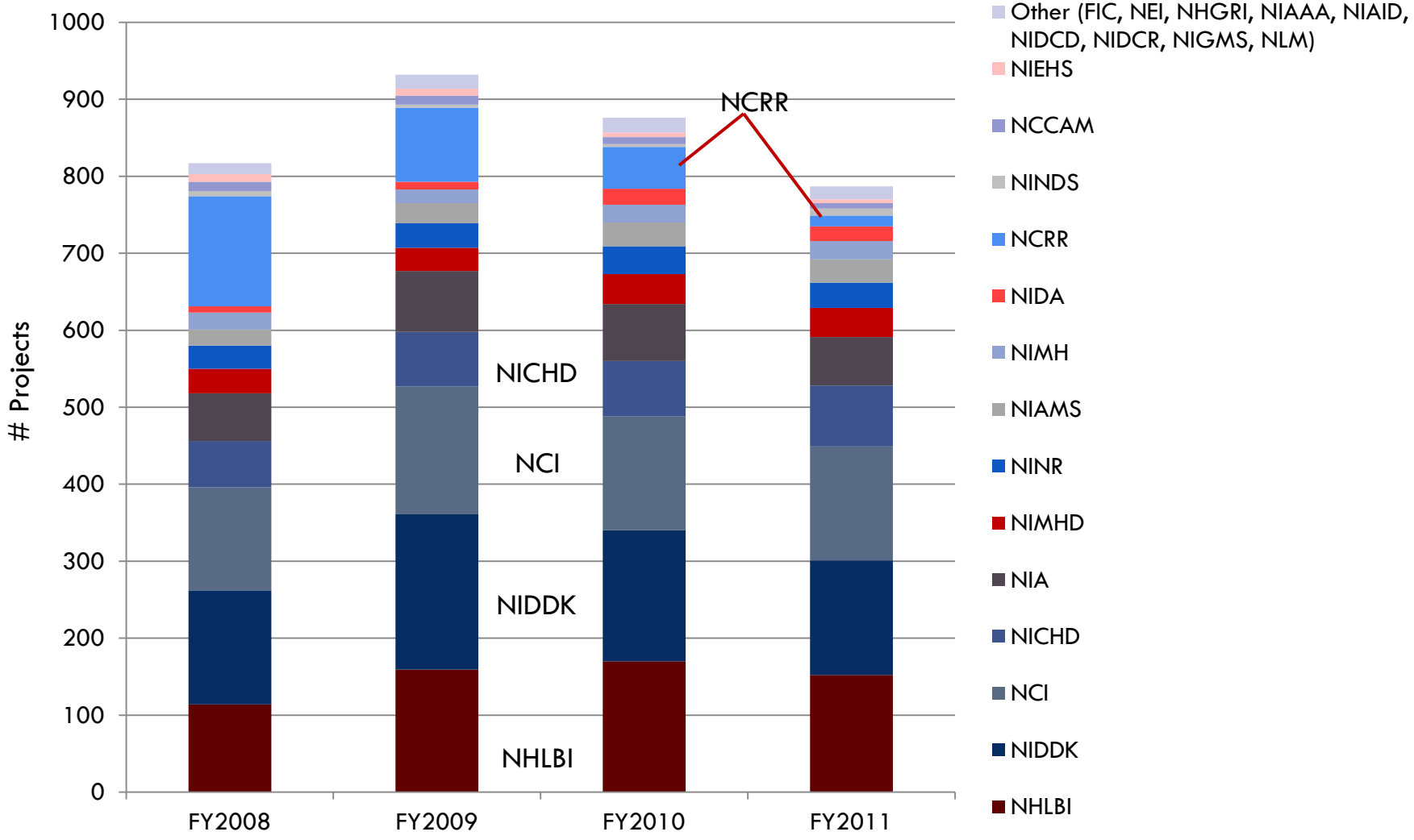
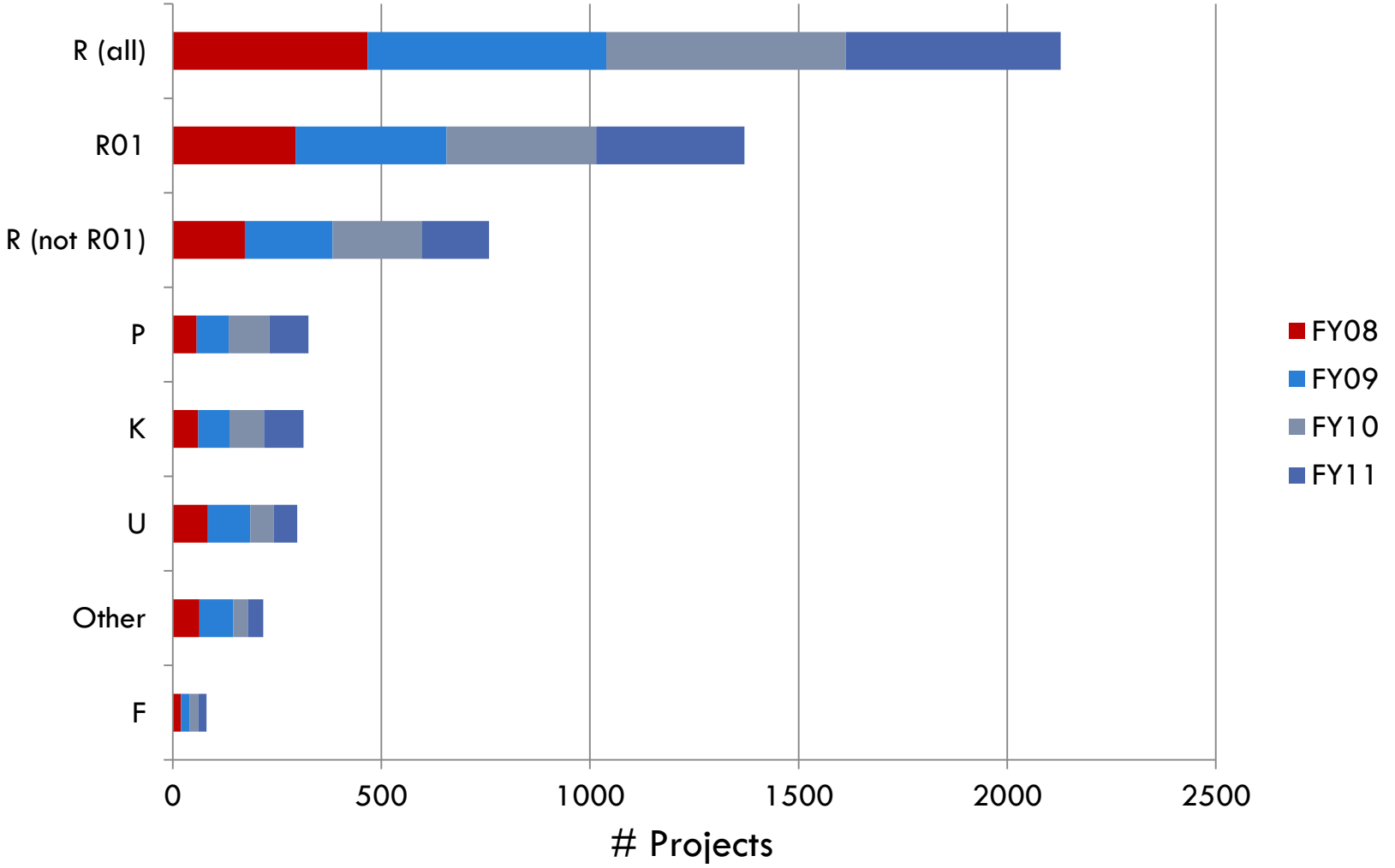


Grant Activity Codes

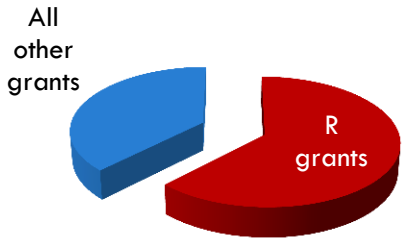
- F- Fellowship Programs
- K- Research Career Programs
- P- Research Program Projects and Centers
- R- Research Projects
- U- Cooperative Agreements

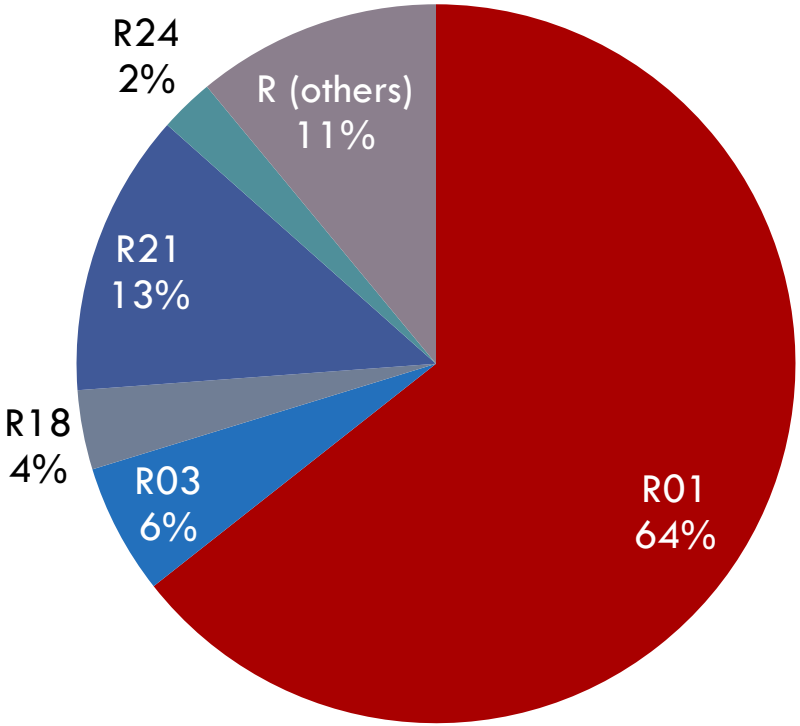
Projects by Activity



Distribution by Funding Mechanism

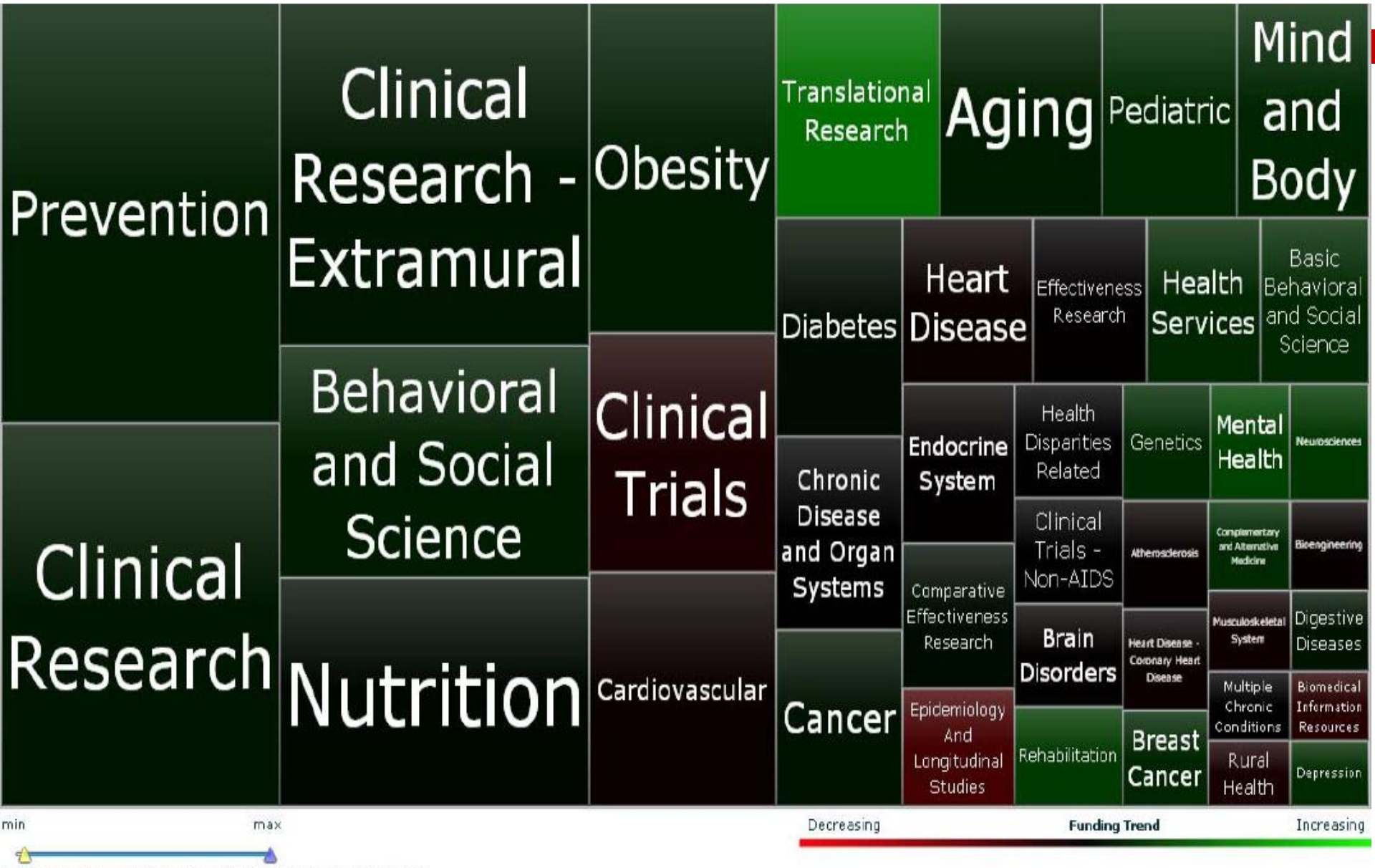
- R- Research Projects

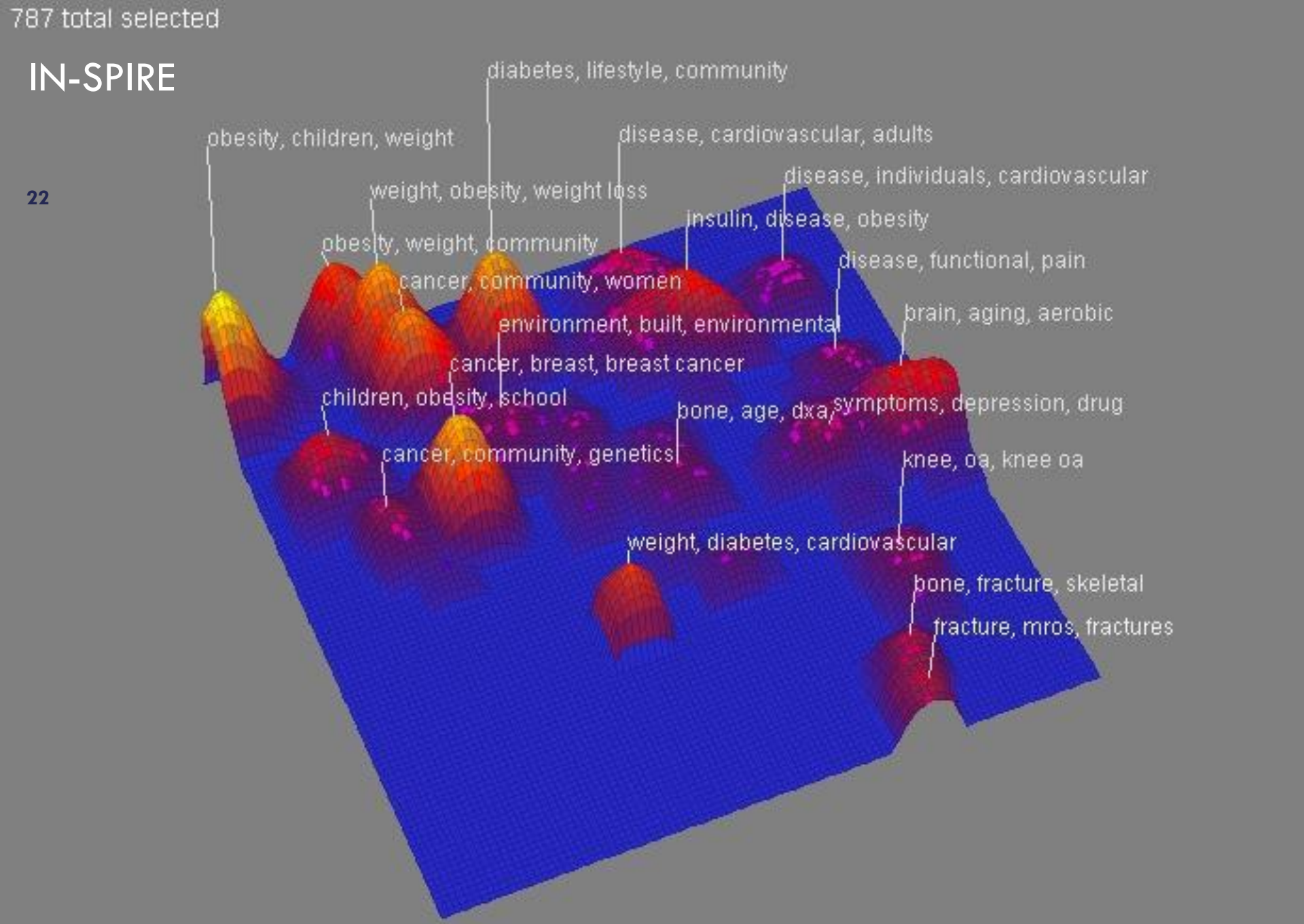




R01: Research Project
R03: Small Research Grants
R18: Research Demonstration and Dissemination Projects
R21: Exploratory/Developmental Grants
R24: Resource-Related Research Projects

PViz: Most Common RCDC categories



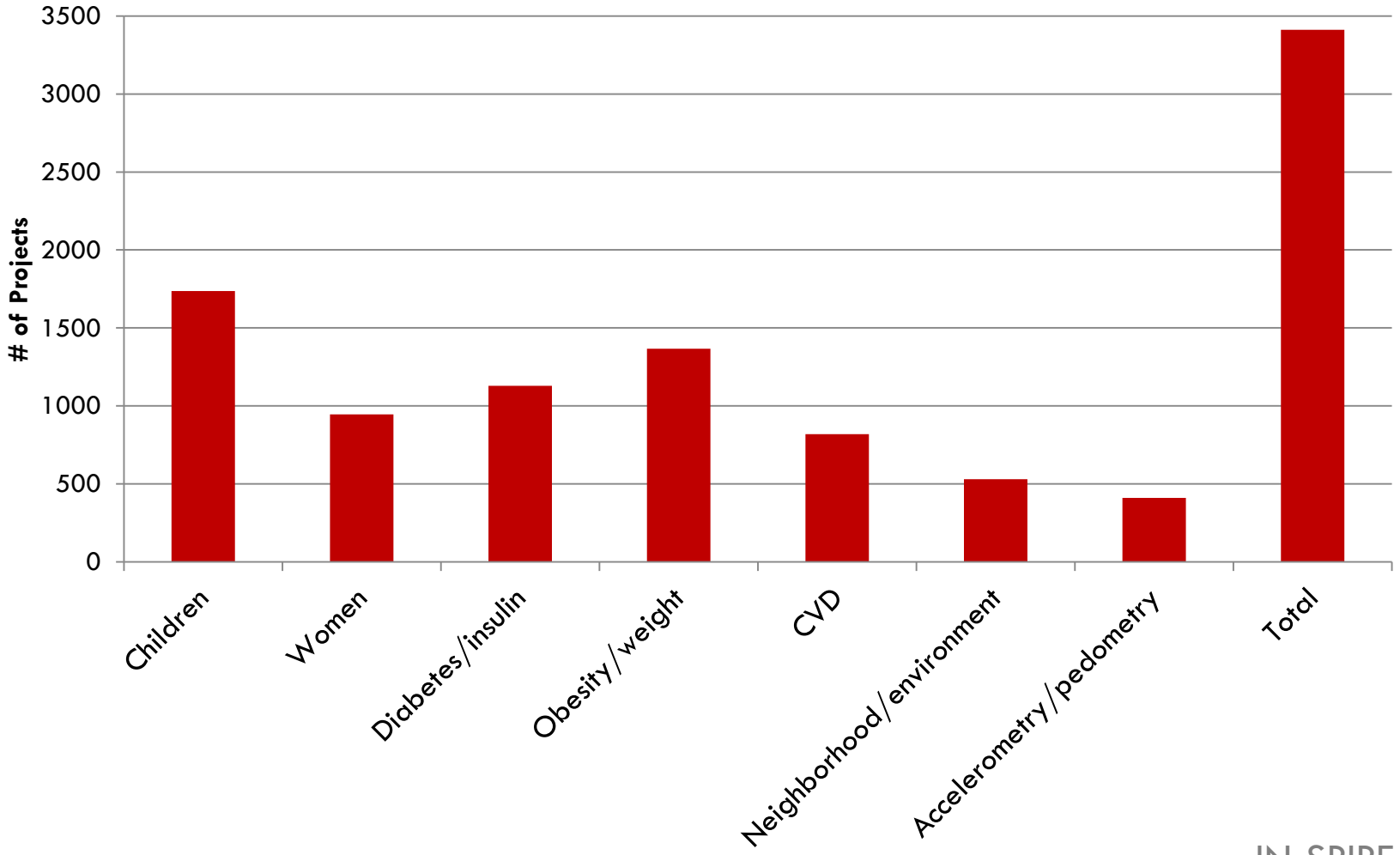


FY2011 Physical Activity Portfolio Landscape

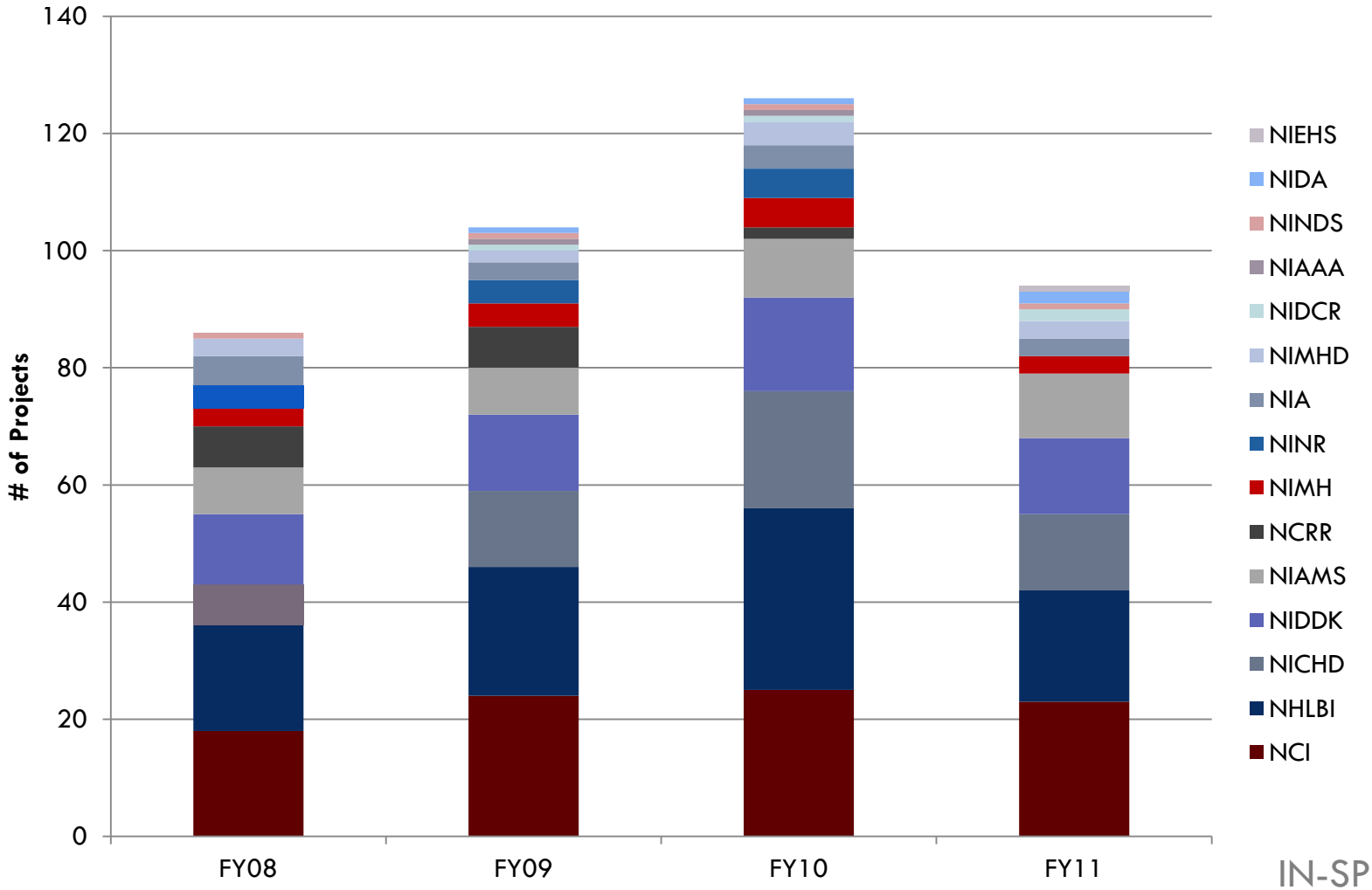
Projects by Theme

- From PA guidelines:
  - Population groups: women, children/youth
  - Obesity/weight
  - Diabetes
  - Cardiovascular disease
  - Environments: neighborhood, school, community
  - Accelerometry and pedometry
  - Exercise types: aerobic activity, resistance training, bone-strengthening

Projects by theme: FY08-FY11

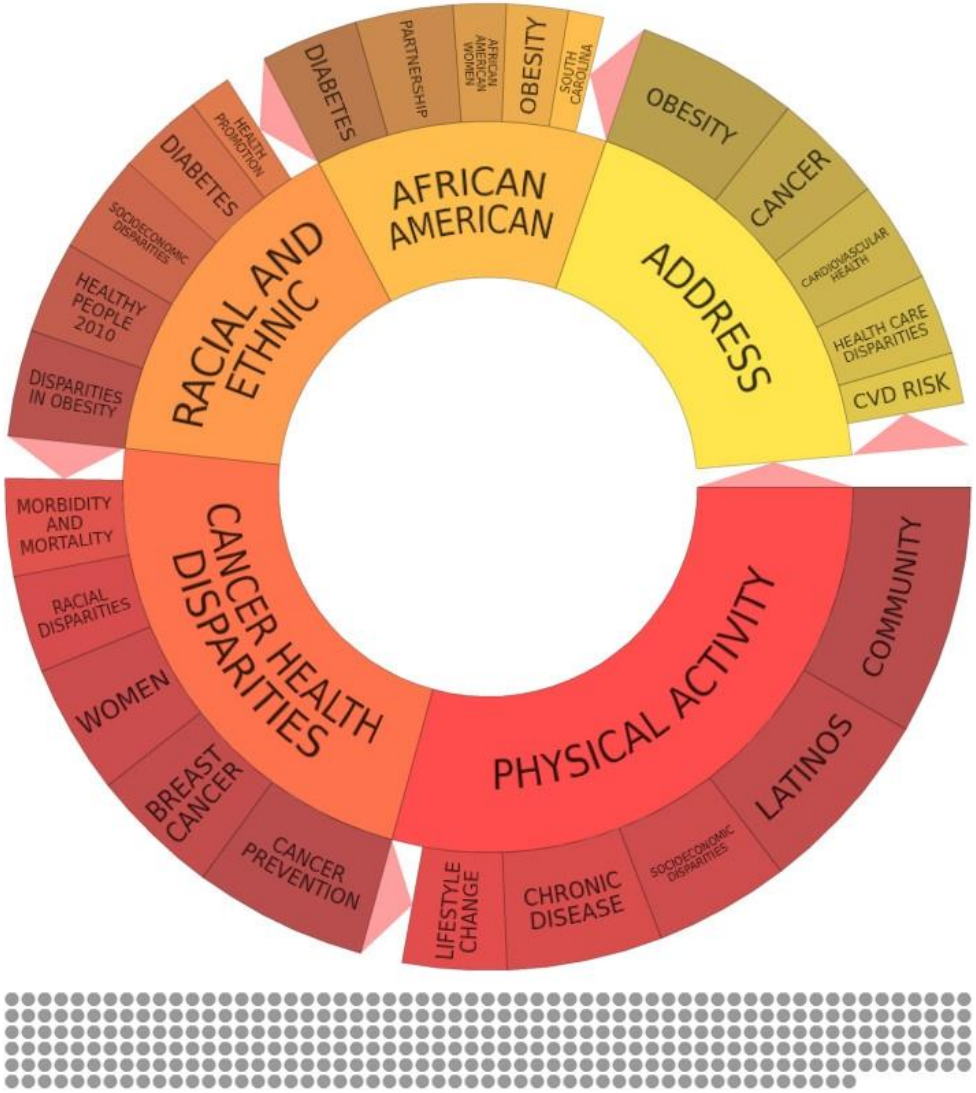


Projects by Theme: "Accelerometry" or "Pedometry"



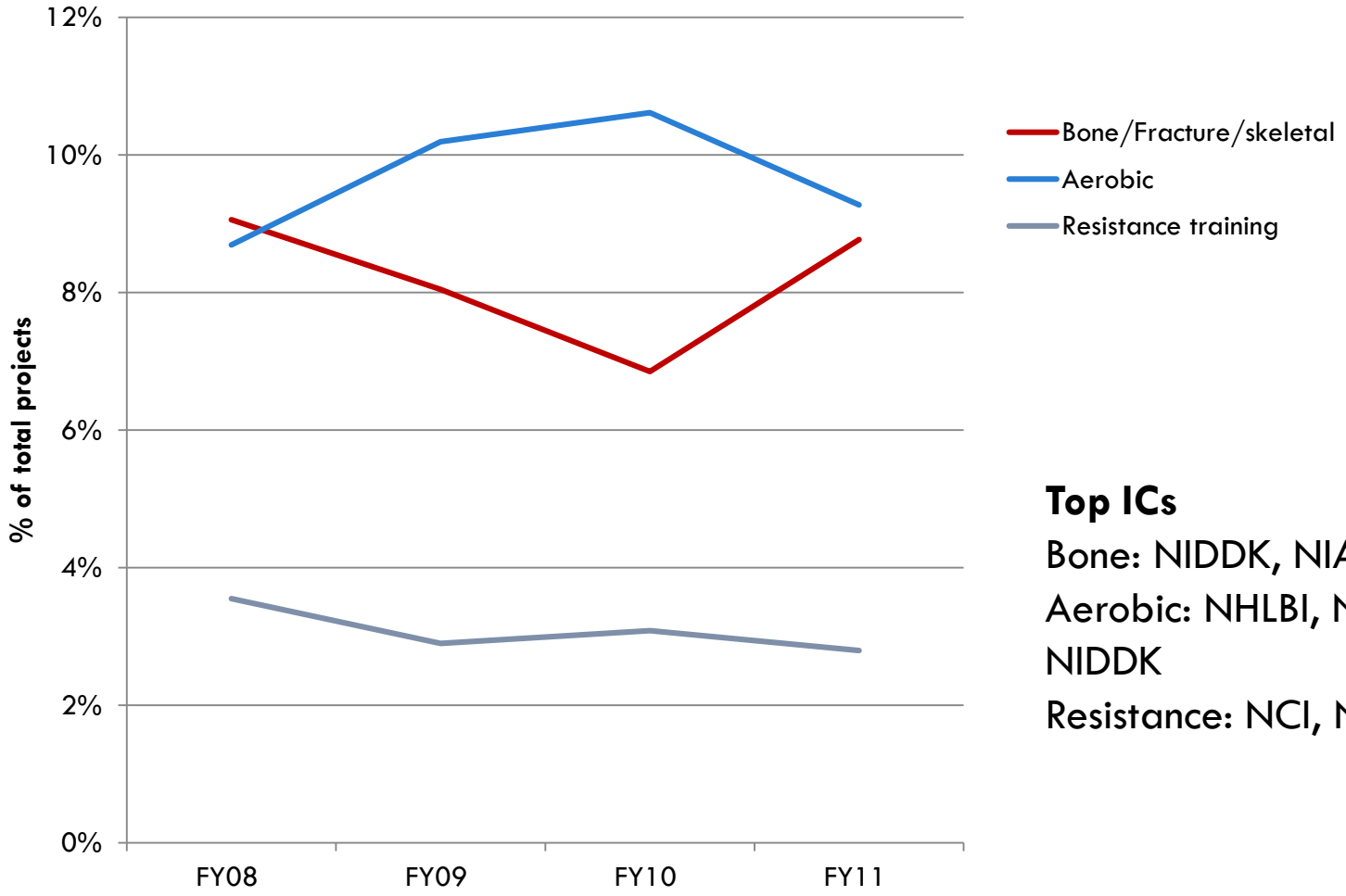
IN-SPIRE

Common Themes: “Disparities”



PViz

Trends in Exercise Categories



Top ICs

Bone: NIDDK, NIA, NIAMS

Aerobic: NHLBI, NIA, NCI, NIDDK

Resistance: NCI, NIA, NIDDK

Acknowledgements

- Office of Portfolio Analysis
  - George Santangelo, Director
  - Carole Christian
  - Paula Fearon

Summary Discussion

- **Were you surprised by any of the data –** e.g. number of projects, themes of IC distribution?
- If you were to make a recommendation on mechanism of award (R, K, P) and the state-of-the-science in PA research, **what should NIH focus on for the next five years?**
- From information and themes depicted in the visualization, **are there themes or areas of research that should receive increased emphasis, decreased emphasis?**

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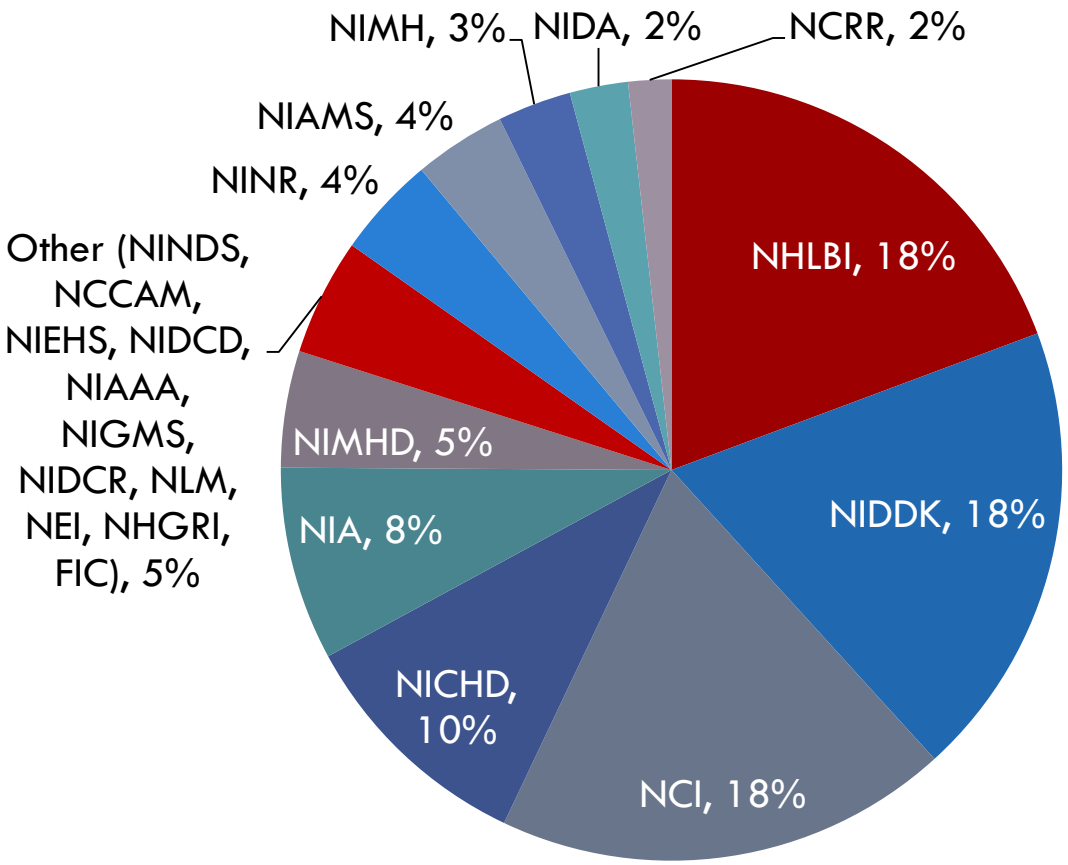
Additional discussion questions

- Are there new approaches for strengthening the evidence base for future physical activity program and policy initiatives?
- What are the key questions related to future study designs, physical activity measurement methodology, etc.?
- What are the priority research and program needs?

Supplemental Information

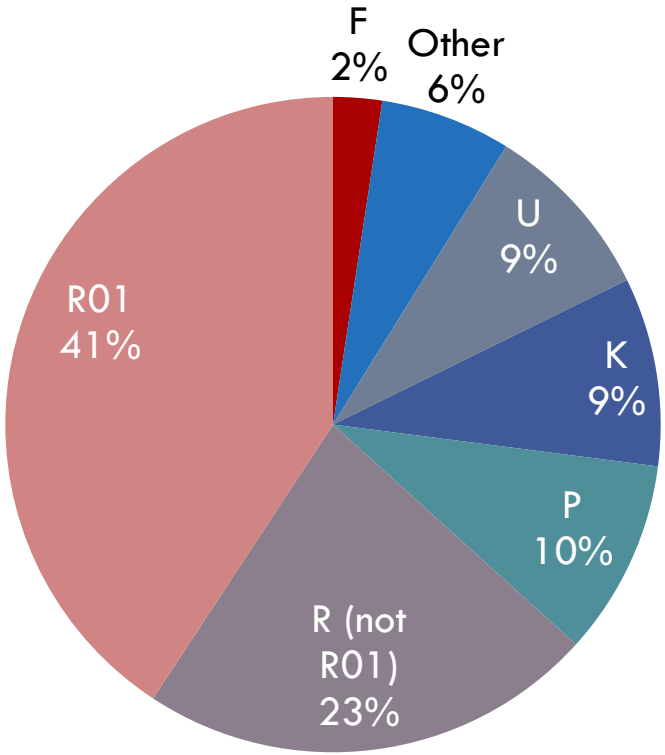
- The following slides contain additional materials produced from the portfolio analysis process

Projects by IC: FY2011

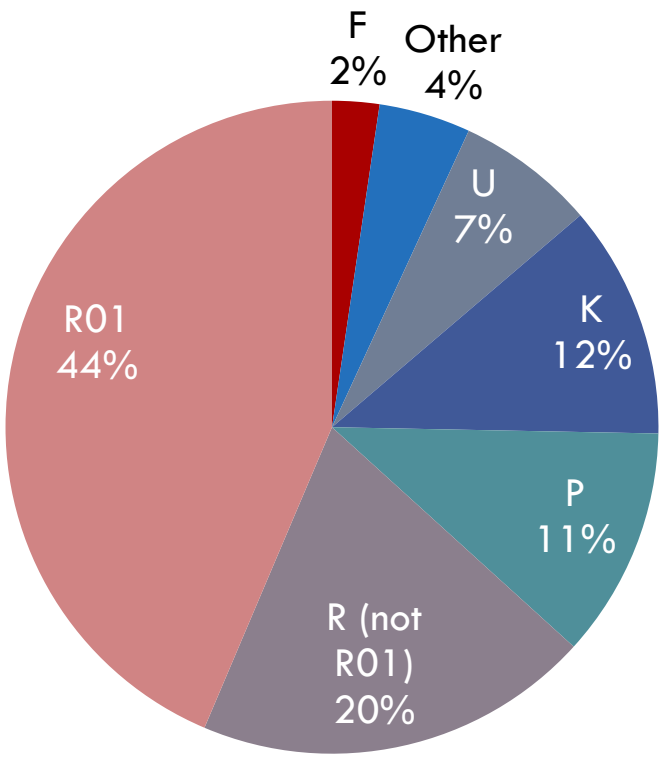


Distribution of Projects by Activity

Distribution of projects by activity (FY08-FY11)

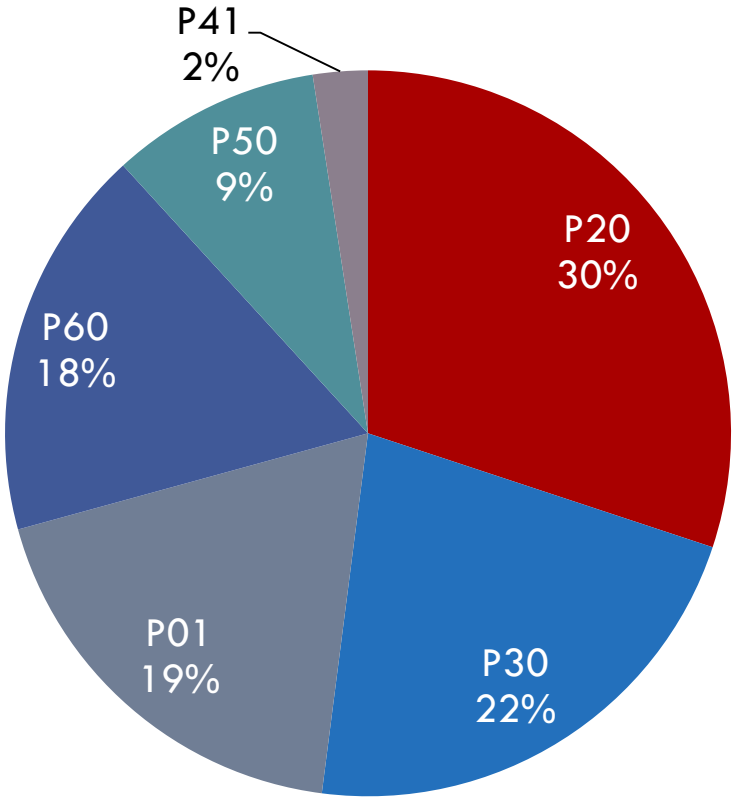


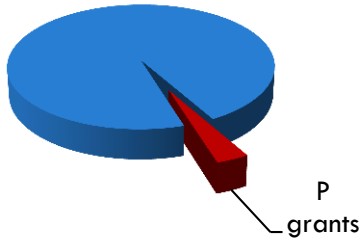
Distribution of projects by activity (FY11)



Distribution by Funding Mechanism

- P- Research Program Projects and Centers





P01: Research Program Projects

P20: Exploratory Grants

P30: Center Core Grants

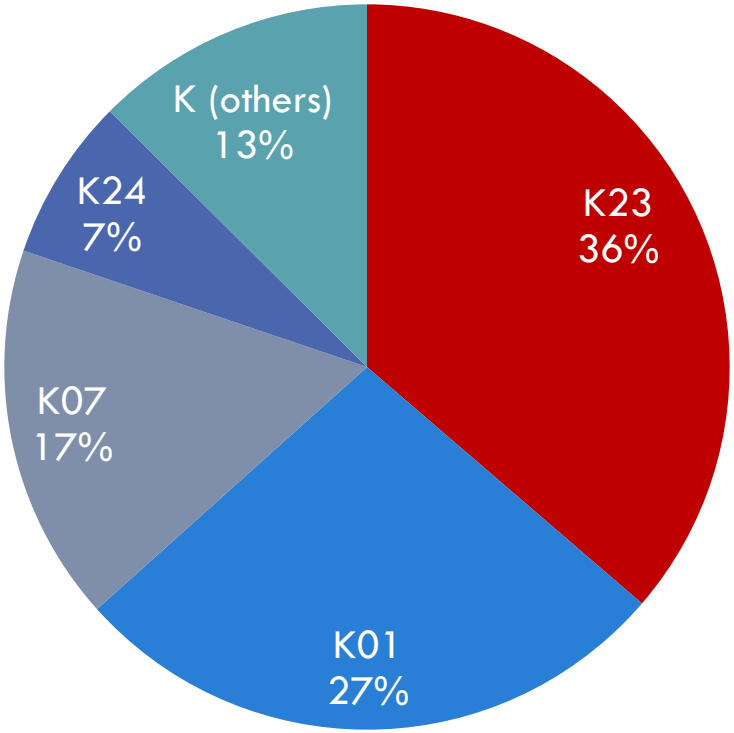
P41: Biotechnology Resource Grants

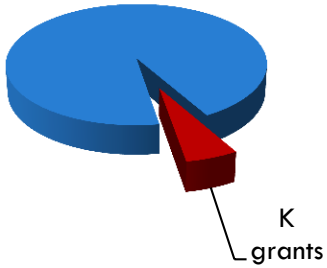
P50: Specialized Center

P60: Comprehensive Center

Distribution by Funding Mechanism

- K- Research Career Programs





K01: Research Scientist Development Award

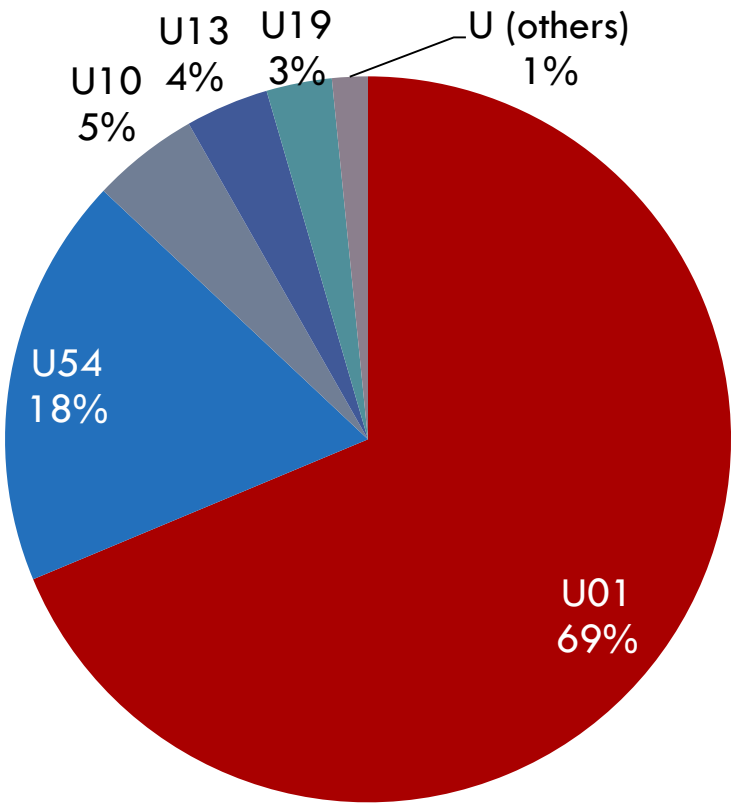
K07: Academic/Teacher Award

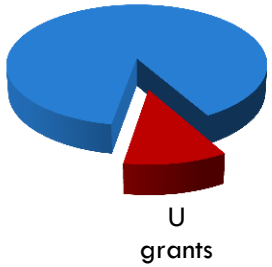
K23: Mentored Patient-Oriented Research Career Development Award

K24: Midcareer Investigator Award in Patient-Oriented Research

Distribution by Funding Mechanism

- U- Cooperative Agreements





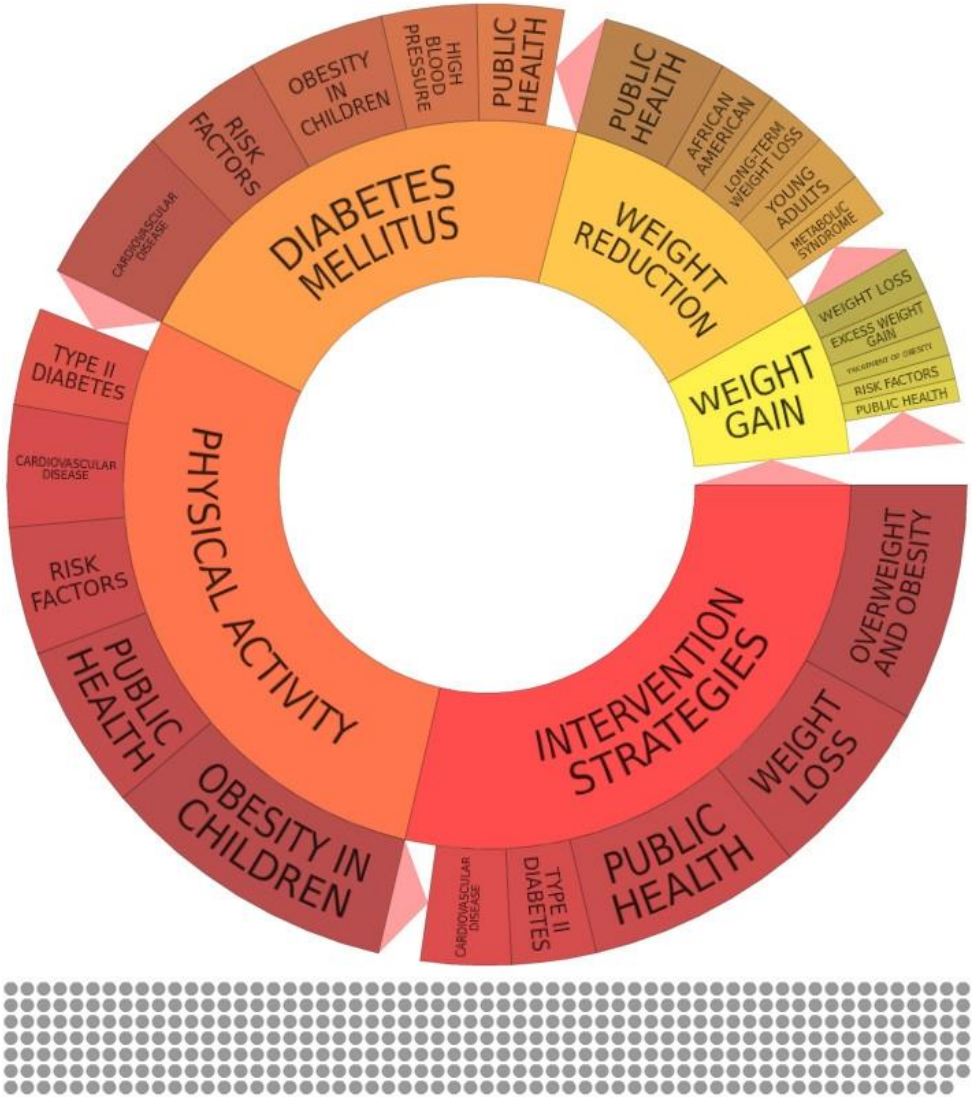
U01: Research Project

U10: Cooperative Clinical Research U13: Conference

U19: Research Program

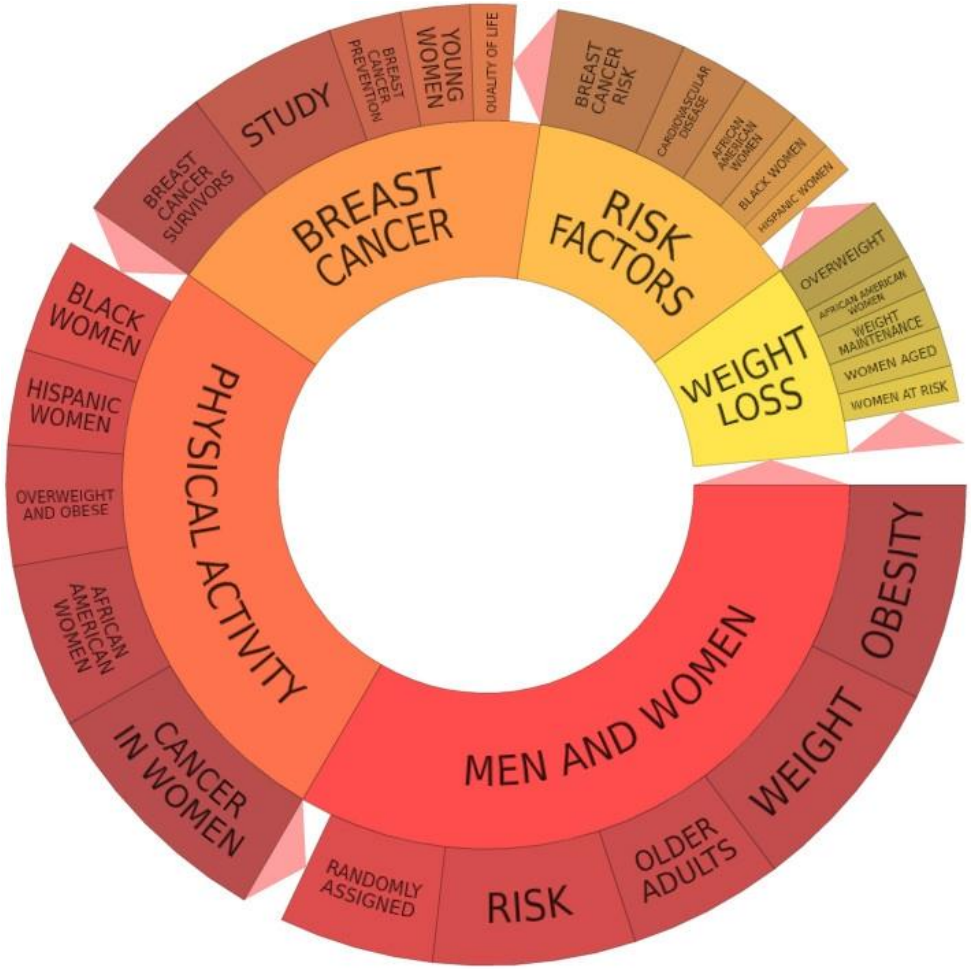
U54: Specialized Center

Common Themes: "Obesity"



PViz

Common Themes “Women”



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